

REMARKS

Claims 1-24 and new Claims 25-28 are in this application.

Favorable reconsideration of this application, as presently amended, is respectfully requested.

At the outset, Applicants wish to thank the Examiner for the courteous telephone interview extended to Applicants' representative, Mr. George M. Kaplan, on December 3, 2004 and made of record by the Examiner in the Interview Summary dated December 14, 2004. During the telephone interview, the distinctions between the presently claimed invention and the prior art of record were discussed. No agreement was reached.

DRAWINGS

Two (2) sheets of Formal drawings are enclosed herewith. Each sheet has been labeled "Replacement Sheet" and the legend PRIOR ART has been inserted on Fig. 1.

Accordingly, the withdrawal of the objection to Fig. 1 is deemed to be in order and such favorable action is courteously requested.

CLAIM OBJECTIONS

The claims having been properly renumbered by the Examiner, the objection thereto in this regard is believed to have been obviated.

CLAIM REJECTION- 35 U.S.C. § 102

Claim 13 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Rider (U.S. Patent No. 6,422,318 B1).

The rejection of Claim 13 as being anticipated by Rider is respectfully traversed.

Before discussing the prior art, it appears prudent for Applicants to briefly discuss the presently claimed invention.

Applicants' invention relates to a cooling water intake system and method of delivering cooling water to equipment necessitating cooling for proper functioning. More particularly, Applicants' system and method involves delivering cooling ground waters from under the bottom or floor of a water reservoir, such as the ocean, sea, lake and the like. Applicants have found that by utilizing the ground waters from under the floor of the sea or the ocean, for example, to cool equipment utilized, for example, in onshore industrial facilities, such as electric power generating plants, many of the disadvantages associated with prior conventional cooling means are eliminated.

Conventionally, equipment in onshore industrial facilities is cooled, for example, by taking the surface waters of the ocean or sea and delivering these waters to the equipment. As discussed in Applicants' specification, the utilization of ambient surface ocean or sea waters for cooling equipment purposes produces a variety of negative environmental impacts. For instance, the massive volumes of water circulated through a facility absorb heat, typically raising the cooling water temperature 15 to 20°F within seconds. Thus, the now heated water discharged from the facility back into the ocean or sea causes thermal plumes of the ambient

water in the vicinity of the facility. Especially during summer months these plumes are sufficiently hot to kill or stun fish and invertebrates.

In addition, in the operation of these conventional cooling systems, small aquatic organisms are entrained by the pumped-in influent water. Entrainment of planktonic organisms, including eggs and larval forms results in as much as 100% mortality of these organisms. This mortality is thought to be a major factor in the reduction of fish stocks in both fresh and saline waters. A further disadvantage of these conventional cooling systems is associated with impingement which is the process whereby larger fish and invertebrates are sucked against the intake screens of a power plant or forced against the sea floor. The water velocity prevents them from getting off the screens and they remain there until the screens are washed. Impinged fish and invertebrates are often killed.

Utilization of Applicants' invention eliminates or substantially eliminates all of these disadvantages associated with conventional cooling systems. For example, since the ground waters beneath the floor of a water reservoir, such as the ocean or sea do not experience seasonal thermal variations, these waters remain at near constant temperature year round thereby eliminating thermal plumes upon discharge back to the water reservoir. Since the cooling waters are taken from beneath the sea or ocean floor, killing of fish and invertebrates is eliminated as well as is the impingement of these species. Furthermore, since the cooling water is taken from under the floor of the sea or ocean, all stages of plankton are excluded. Moreover, since Applicants' invention utilizes ground waters which are

substantially colder than surface waters, especially during the summer months, a concomitant advantage associated with Applicants' invention is a substantial increase in thermal efficiency, for example, in the operation of a steam electric power plant. This efficiency gain allows for substantial fuel savings during periods of peak demand, for example, summer months.

Accordingly, it is respectfully submitted that neither original Claim 13, nor Claim 13 as presently amended, is anticipated by Rider. That is, in contrast to Applicants' claimed invention and contrary to Examiner's comments, Rider does not disclose a delivery assembly which delivers ground water from under the bottom or floor of a water reservoir.

In this regard, the Examiner's attention is invited to the drawings as filed in the present application. For example, Fig. 2 clearly shows that in Applicants' delivery system the water is taken from under the bottom (floor) 52 of water reservoir 54. In contrast, Rider delivers aquifer water from under the ground surface 14, not from under the bottom or floor of a water reservoir. See Fig. 1 and the discussion at Column 3, lines 16-19 and lines 34-39 of Rider. Looking at it another way, comparing Applicants' Fig. 2 with Rider's Fig. 1, there is no analogous water reservoir 54 as shown in Applicants' Fig. 1 above the ground surface 14 shown in Rider's Fig. 1.

In an effort, perhaps, to more clearly recite Applicants' invention, Claim 13 has been amended to recite that the water is taken from "under the floor of the water reservoir" (emphasis added). Support for the term "floor" is expressly found at

page 3, line 2 of paragraph 00012 of Applicants' originally filed specification and is clearly shown in the originally filed drawings.

In further contrast to Rider, Claim 13, as presently amended, now recites delivering "cooling ground water ... to equipment, the proper functioning of which requires cooling". At column 9, lines 6-9, Rider discloses delivering the aquifer water to merely a storage facility or a treatment facility. Rider does not disclose delivering the water to equipment for "cooling" purposes.

Accordingly, in view of the above discussion, is it respectfully submitted that the withdrawal of the rejection of Claim 13 as being anticipated by Rider is in order and same is respectfully requested.

CLAIM REJECTION- 35 U.S.C. § 103

The rejection of Claims 1-12 and 14-24 under 35 U.S.C. § 103(a) as being unpatentable over Rider in view of Cherrington (U.S. Patent No. 4,319,648) is respectfully traversed.

The deficiencies of Rider (U.S. Patent No. 6,422,318B1) with regard to Applicants' invention and more particularly with regard to Claim 13 have been discussed hereinabove. It is respectfully submitted that these same deficiencies are equally applicable to Claims 1-12 and 14-24.

That is, while Rider may disclose delivering aquifer water to a facility, Rider, among other deficiencies, fails to disclose:

(a) delivering cooling water to equipment requiring cooling for proper functioning (as presently recited in the claims);

(b) delivering water from under the bottom or floor of a water reservoir. In this regard, the Examiner's attention is again invited to the discussion hereinabove explaining that the soil layer 34 of Rider is not analogous to the bottom or floor 52 of the water reservoir as shown in Fig. 2 of Applicants' drawings;

(c) extending at least one pipe under the bottom floor (bottom) of the water reservoir; and

(d) filtering the ground water through a sand substrate of the floor (bottom) of the water reservoir.

In an effort to overcome these and other deficiencies of Rider, the Examiner has cited Cherrington ('648). It is respectfully submitted, however, that Cherrington fails to overcome any of the deficiencies of Rider.

More particularly, in contrast to Applicants' invention, Cherrington merely relates to a method for drilling and installing pipe and the like beneath a river so as to traverse the river from one side to the other. See column 4, lines 45-50 and Fig. 1 of Cherrington. Thus, while Cherrington may disclose installing pipe beneath the bottom of a river, Cherrington does not disclose or even remotely suggest taking ground water from under the bottom or floor of the river and delivering it through the pipe to a facility, much less delivering the ground water to equipment for cooling the equipment. Moreover, contrary to the Examiner's remarks, Cherrington does not disclose extending a pipe beneath the water reservoir and terminating the pipe a distance from the shore. Rather, Cherrington discloses extending the pipe

from one point on the shore of the river to another point on the opposite shore of the river. Compare Fig. 1 of Cherrington with Applicants' Fig. 2.

The Examiner further makes the unsupported statement that it would have been obvious to modify the Rider method such that it would be performed beneath the river as disclosed by Cherrington, the motivation being to access an aquifer beneath a body of water. The flaw in the Examiner's statement is that merely because Cherrington discloses a method to traverse a river by drilling and laying pipe beneath the bottom of the river does not, without the hindsight knowledge of Applicants' disclosure, even remotely suggest to extend pipe under the floor of a water reservoir for the purpose of intaking the ground waters under the floor of the reservoir and delivering the waters to equipment for cooling purposes.

Furthermore, with regard to claim 21, while it may be the case that aquifer water may not experience seasonal thermal variations, without the hindsight knowledge of Applicants' disclosure, there is no suggestion whatsoever in the prior art of record to take advantage of this characteristic and utilize it in the manner claimed by Applicants.

Having discussed the fundamental differences of Applicants' claimed invention with regard to the cited prior art and rejections of record, it is deemed unnecessary for Applicants to address the remaining dependent claim details recited by the Examiner at pages 4-10 of the Office Action.

Accordingly, in view of the above discussion, it is respectfully submitted that the withdrawal of the rejection of Claims 1-12 and 14-21 under 35 U.S.C. 103(a) as

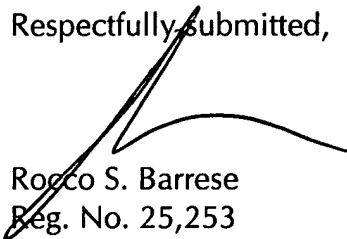
being unpatentable over Rider in view of Cherrington is deemed to be in order and the same is respectfully requested.

New Claims 25-28 have been added herein to cover certain specific embodiments of Applicants' invention. Support for these claims is clearly found in Applicants' originally filed application and these claims are also deemed to be patentable over the cited prior art.

In view of all of the above, it is respectfully submitted that this application is in condition for allowance and such favorable action is respectfully requested.

It is respectfully requested that the undersigned attorney be contacted by telephone should the Examiner have any questions or wish to discuss any further matters.

Respectfully submitted,



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